

## CLAIMS

What is claimed is:

1           1.     A method for managing the channel suitability in a multiple access  
2 scheme, comprising:

3           obtaining information relating to noise associated with a channel;  
4           estimating a potential effect of the noise on a transmission quality of the channel  
5 based on the obtained information;  
6           assigning a rating to the channel based on the estimated potential effect;  
7           classifying the channel into a grade of service class based on the assigned rating;  
8 and  
9           storing information relating to the channel and the associated rating and grade in  
10 a database.

1           2.     The method of claim 1, wherein obtaining information relating to noise  
2 associated with a channel further comprises: sampling channel noise; and correlating the  
3 sampled channel noise with the channel.

1           3.     The method of claim 1, wherein estimating a potential effect of the noise  
2 on the transmission quality of the channel based on the obtained information further  
3 comprises determining a projected bit error rate for the channel based on the obtained  
4 information.

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1           4.     The method of claim 3, wherein determining the projected bit error rate  
2     for the channel further comprises: calculating one or more interference metrics for the  
3     channel using the obtained information; and utilizing the calculated interference metrics  
4     to determine the projected bit error rate.

1           5.     The method of claim 4, wherein the interface metrics include a pulse  
2     position modulation error rate.

1           6.     The method of claim 1, wherein the grade of service class relates to the  
2     channel's suitability for carrying a particular data type.

1           7.     The method of claim 1, further comprising: prioritizing the channel the  
2     grade of service class based on the rating of the channel.

1           8.     The method of claim 7, wherein information relating to the priority of the  
2     channel is stored in the database

1           9.     The method of claim 1, wherein the channel is obtained from the  
2     database.

1           10.    The method of claim 1, wherein the channel is periodically tested to  
2 determine whether the grade of service class of the channel needs to be changed.

1           11.    The method of claim 1, further comprising: receiving a request for a  
2 channel from a requestor; searching the database to obtain a channel suitable for  
3 fulfilling the request; allocating the suitable channel to the requestor, notifying the  
4 requestor to use the allocated channel, and indicating in the database that the allocated  
5 channel is in use.

1           12.    The method of claim 1, further comprising: receiving information  
2 relating to use of a channel when a user relinquishes use of the channel; determining an  
3 actual bit error rate for the relinquished channel based on the received information,  
4 assigning a rating to the relinquished channel based on the actual bit error rate;  
5 classifying the channel to a grade of service class based on the assigned rating; updating  
6 the information relating to the channel stored in the database to indicate grade of service  
7 class of the channel based on the actual bit error rate and that the channel is available for  
8 use.

1           13.    The method of claim 1, wherein the channel comprises a sequence code  
2 in a code-division multiple access (CDMA) scheme.

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1           14.    The method of claim 1, wherein the channel comprises an ultra wideband  
2 radio channel.

1           15.    A system for managing the channel suitability in a multiple access  
2 scheme, comprising:

3                   logic for obtaining information relating to noise associated with a channel;

4                   logic for estimating a potential effect of the noise on a transmission quality of  
5 the channel based on the obtained information;

6                   logic for assigning a rating to the channel based on the estimated potential  
7 effect;

8                   logic for classifying the channel into a grade of service class based on the  
9 assigned rating; and

10                  logic for storing information relating to the channel and the associated rating and  
11 grade in a database.

1           16.    The system of claim 15, wherein the logic for obtaining information  
2 relating to noise associated with a channel further comprises logic for sampling channel  
3 noise; and logic for correlating the sampled channel noise with the channel.

1           17.    The system of claim 15, wherein the logic for estimating a potential  
2 effect of the noise on the transmission quality of the channel based on the obtained

3 information further comprises logic for determining a projected bit error rate for the  
4 channel based on the obtained information.

1 18. The system of claim 17, wherein the logic for determining the projected  
2 bit error rate for the channel further comprises logic for calculating one or more  
3 interference metrics for the channel using the obtained information; and logic for  
4 utilizing the calculated interference metrics to determine the projected bit error rate.

1 19. The system of claim 18, wherein the interface metrics include a pulse  
2 position modulation error rate.

1 20. The system of claim 15, wherein the grade of service class relates to the  
2 channel's suitability for carrying a particular data type.

1 21. The system of claim 15, further comprising logic for prioritizing the  
2 channel the grade of service class based on the rating of the channel.

1 22. The system of claim 21, wherein information relating to the priority of  
2 the channel is stored in the database

1           23.    The system of claim 15, wherein the channel is obtained from the  
2    database.

1           24.    The system of claim 15, wherein the channel is periodically tested to  
2    determine whether the grade of service class of the channel needs to be changed.

1           25.    The system of claim 1514, further comprising logic for receiving a  
2    request for a channel from a requestor; logic for searching the database to obtain a  
3    channel suitable for fulfilling the request; logic for allocating the suitable channel to the  
4    requestor, logic for notifying the requestor to use the allocated channel, and logic for  
5    indicating in the database that the allocated channel is in use.

1           26.    The system of claim 15, further comprising logic for receiving  
2    information relating to use of a channel when a user relinquishes use of the channel;  
3    logic for determining an actual bit error rate for the relinquished channel based on the  
4    received information, logic for assigning a rating to the relinquished channel based on  
5    the actual bit error rate; logic for classifying the channel to a grade of service class  
6    based on the assigned rating; logic for updating the information relating to the channel  
7    stored in the database to indicate grade of service class of the channel based on the  
8    actual bit error rate and that the channel is available for use.

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1           27.    The system of claim 15, wherein the channel comprises a sequence code  
2           in a code-division multiple access (CDMA) scheme.

1           28.    The system of claim 15, wherein the channel comprises an ultra  
2           wideband radio channel.

1           29.    A computer program product for managing the channel suitability in a  
2           multiple access scheme, comprising:

3                computer code for obtaining information relating to noise associated with a  
4           channel;

5                computer code for estimating a potential effect of the noise on a transmission  
6           quality of the channel based on the obtained information;

7                computer code for assigning a rating to the channel based on the estimated  
8           potential effect;

9                computer code for classifying the channel into a grade of service class based on  
10          the assigned rating; and

11               computer code for storing information relating to the channel and the associated  
12          rating and grade in a database.

1           30.    The computer program product of claim 29, wherein the computer code  
2           for obtaining information relating to noise associated with a channel further comprises

3 computer code for sampling channel noise; and computer code for correlating the  
4 sampled channel noise with the channel.

1 31. The computer program product of claim 29, wherein the computer code  
2 for estimating a potential effect of the noise on the transmission quality of the channel  
3 based on the obtained information further comprises computer code for determining a  
4 projected bit error rate for the channel based on the obtained information.

1 32. The computer program product of claim 31, wherein the computer code  
2 for determining the projected bit error rate for the channel further comprises computer  
3 code for calculating one or more interference metrics for the channel using the obtained  
4 information; and computer code for utilizing the calculated interference metrics to  
5 determine the projected bit error rate.

1 33. The computer program product of claim 32, wherein the interface metrics  
2 include a pulse position modulation error rate.

1 34. The computer program product of claim 29, wherein the grade of service  
2 class relates to the channel's suitability for carrying a particular data type.



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1           35.    The computer program product of claim 29, further comprising computer  
2   code for prioritizing the channel the grade of service class based on the rating of the  
3   channel.

1           36.    The computer program product of claim 35, wherein information relating  
2   to the priority of the channel is stored in the database

1           37.    The computer program product of claim 29, wherein the channel is  
2   obtained from the database.

1           38.    The computer program product of claim 29, wherein the channel is  
2   periodically tested to determine whether the grade of service class of the channel needs  
3   to be changed.

1           39.    The computer program product of claim 29, further comprising computer  
2   code for receiving a request for a channel from a requestor; computer code for searching  
3   the database to obtain a channel suitable for fulfilling the request; computer code for  
4   allocating the suitable channel to the requestor, computer code for notifying the  
5   requestor to use the allocated channel, and computer code for indicating in the database  
6   that the allocated channel is in use.

